

Biological Activities for Extracts of Nescafé (*Mucuna pruriens*)

Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Fruit India	Toxicity Assessment	ETOH-H2O (1:1) Ext	IP Mouse	1.0 gm/kg			A03335
Root India	Toxicity Assessment	ETOH-H2O (1:1) Ext	IP Mouse	250.0 mg/kg			A03335
Not Stated India	Toxic Effect (general)	ETOH (100%)Ext	Mouse	200.0 mg/kg	Inactive		L10702
Seed India	Toxic Effect (general)	H2O Ext	PO Rat	Variable	Active	Feeding caused weight loss unless supplemented with l-methionine and l-tryptophan. The protein fraction of the seeds was incorporated into the experimental ration.	T06797
Seed Pakistan	Toxic Effect (general)	Not Stated	IG Rabbit	8.0 gm/kg	Inactive		L03572
Seed India	Toxic Effect (general)	ETOH Ext	PO Rat	600 mg/kg	Inactive		BP1006
Bean Honduras	Toxic Effect (general)	Raw Bean Heated Bean	PO Chicken	30%	Active Weak Activity	Growth-inhibiting.	BP1011
Bean India	Toxic Effect (general)	Powder	IG Mice & Rat PO Mice & Rat	2.5 g/kg 5 g/kg 7.5 g/kg 10 g/kg LD50: > 10 g/kg	Inactive	No toxicity, change in behavior and mortality seen. When 10 g/kg were administered for 1 year, no significant abnormalities seen.	BP1012
Seed India	Teratogenic Activity	H2O Ext	IG Rat	175.0 mg/kg	Active		K16006
Seed India	Embryotoxic Effect	H2O Ext	IG Rat	175.0 mg/kg	Inactive		K16006
Leaf Nigeria	Anticoagulant Activity	H2O Ext	Blood-human	1.0 mg/ml	Active		K20898
Not Stated	Antiparkinson Activity	Not Stated	Human Adult	55-88%	Active	<i>Mucuna</i> , in combination with <i>Piper longum</i> and <i>Zingiber officinalis</i> , slows the progression of Parkinson's symptoms (tremors, rigidity, slurring, drooling, balance etc.) Case study conducted over 12 years.	BP1008

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Seed India	Antiparkinson Activity	Endocarp Tissue	PO Rat	5.0 gm/kg	Active	Carbidopa administration required to have effect.	J16263
Seed India	Antiparkinson Activity	MEOH Ext	IP Rat	200.0 mg/kg	Active	An alcohol-insoluble methanol extract, free from l-dopa, was tested.	T06167
Seed India	Antiparkinson Activity	Seeds	GI Rat	400.0 mg/kg	Active		T06167
Seed India	Antiparkinson Activity	Seeds	PO Human Adult	15-40 gm	Active	L-dopa content about 4.5-5.5%.	T03294
Seed India	Antiparkinson Activity	Not Stated	PO Human Adult	Not Stated	Active	Levodopa isolated from extract.	M25765
Bean endocarp India	Antiparkinson Activity	Powder	PO Human Adult	45 mg ± 22.5 mg	Active	60 patients in study; 26 previously treated with l-dopa, 34 l-dopa naive. Statistically significant reductions in Hoehn & Yahr stage & UPDRS scores seen.	BP1012
Seed India	Cholinesterase Inhibition	MEOH Ext	IP Rat	200.0 mg/kg	Inactive		T06167
Not Stated India	Melatonin Level Increase	Not Stated	IG Rat	1.0 gm/kg	Active	Effects described are from a multi-component Rx.	J16920
Not Stated India	Serotonin (5-HT) Releasing Effect	Not Stated	IG Rat	1.0 gm/kg	Active	Effects described are from a multi-component Rx.	J16920
Not Stated India	Correction of Diabetic Blood Alterations	ETOH(100%)Ext	Mouse	200 mg/kg	Inactive	vs. hepatic & skeletal muscle glycogen content, hepatic glucokinase, hexokinase, glucose-6-phosphate & phosphofructokinase levels.	L10702
Fruit India	Hypoglycemic Activity	ETOH-H2O(1:1) Ext	PO Rat	250.0 mg/kg	Active	More than 30% drop in blood sugar level seen.	A03335
Root India	Hypoglycemic Activity	ETOH-H2O(1:1) Ext	PO Rat	250.0 mg/kg	Active	More than 30% drop in blood sugar level.	A03335
Seed India	Hypoglycemic Activity	Seeds	PO Rat	Not Stated	Active		A14339
Seed India	Hypoglycemic Activity	ETOH-H2O (1:1) Ext	PO Rat	250.0 mg/kg	Inactive	Less than 30% drop in blood sugar level.	W00374
Seed Pakistan	Hypoglycemic Activity	Not Stated	IG Rabbit	Not Stated	Active		L03572

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Not Stated India	Hypoglycemic Activity	ETOH Ext	PO Rat	200 mg/kg	Active	A 40.17% fall in serum blood glucose seen in 1 month. A fall of 45.63% seen after 2 months.	BP1005
Seed Faisalabad	Hypoglycemic Activity	Not Stated	Rabbit	0.5 g/kg 1 g/kg 2 g/kg 1 g/kg 2 g/kg	Active Active Active Active Active	vs. normal rabbits. vs. normal rabbits. vs. normal rabbits. vs. alloxan-diabetic rabbits. vs. alloxan-diabetic rabbits.	BP1013
Not Stated India	Hypoglycemic Activity	ETOH(95%) Ext	Rat	250 - 750 mg/kg	Active	vs. alloxan-diabetic rats.	BP1014
Seed Pakistan	Antihyperglycemic Activity	Not Stated	IG Rabbit	Not Stated	Active	vs. alloxan-induced hyperglycemia.	L03572
Seed India	Antihyperglycemic Activity	Ash ETOH(100%)Ext	IG Rat IG Rat	90.0 mg/kg 250.0 mg/kg	Active Inactive	vs. glucose tolerance tests. vs. glucose tolerance tests.	L05654
Seed India	Antihyperglycemic Activity	ETOH(100%)Ext	PO Mouse	200.0 mg	Active	The urine volume and urinary albumin level was decreased. vs. streptozotocin-induced hyperglycemia.	L15573
Not Stated India	Antihyperglycemic Activity	ETOH(100%)Ext ETOH(100%)Ext	Rat Mouse	200.0 mg/kg 200.0 mg/kg	Active Inactive	vs. alloxan-induced hyperglycemia. 51.01% reduction at 4 months. vs. streptozotocin-induced hyperglycemia.	L10702
Not Stated India	Diabetic Cataract Inhibition	ETOH Ext	PO Rat	200 mg/kg	Active	All rats in the control group developed cataracts when administered with the diabetogenic agent alloxan. Incidence rate in rats treated with the plant extract was two.	BP1005
Fruit India	Cytotoxic Activity	ETOH-H2O (1:1) Ext	Cell Culture	ED50=>20.0 mcg/ml	Inactive	Ca-9kb.	A03335
Fruit India	Antispasmodic Activity	ETOH-H2O (1:1) Ext	Guinea Pig ileum	Not Stated	Active	vs. Ach- and histamine-induced spasms.	A03335
Root India	Antispasmodic Activity	ETOH-H2O (1:1) Ext	Guinea Pig ileum	Not Stated	Active	vs. Ach- and histamine-induced spasms	A03335

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Seed Nigeria	Spasmogenic Activity	Decoction	Guinea Pig ileum	ED50=3.3 mg/ml	Active	Atropine, promethazine, nifedipine, cyproteptadine and verapamil antagonized effect with increasing effectiveness.	J10474
Seed Cuba	Bronchodilator Activity	Hot H2O Ext	IV Guinea Pig	1.5 ml	Inactive		M29843
Not Stated India	Histamine Release Stimulation	Not Stated	IG Rat	1.0 gm/kg	Active		J16920
Fruit Trichomes Africa	Anti-inflammatory Activity	ETOH (95%) Ext	IG Rat	3.0 gm/kg	Active	vs. carrageenan-induced pedal edema.	K12860
Leaf Africa	Anti-inflammatory Activity	ETOH (95%) Ext	IG Rat	1.0 gm/kg	Active	vs. carrageenan-induced pedal edema.	K12860
Leaf + Root + Seed India	Anti-inflammatory Activity	Root	PO Human Adult	Variable	Active		T06320
Fruit Trichomes Africa	Analgesic Activity	ETOH (95%) Ext	IG Rat	1.0 gm/kg	Active	vs. hot plate method.	K12860
Fruit Trichomes Africa	Analgesic Activity	ETOH (95%) Ext	IG Rat	2.0 gm/kg	Active	vs. acetic acid-induced writhing.	K12860
Leaf Africa	Analgesic Activity	ETOH (95%) Ext ETOH (95%) Ext	IG Rat IG Rat	1.0 gm/kg 1.0 gm/kg	Active Active	vs. hot plate method. vs. acetic acid-induced writhing.	K12860
Leaf Africa	Antipyretic Activity	ETOH (95%) Ext	IG Rat	1.0 gm/kg	Active	vs. yeast-induced pyrexia.	K12860
Fruit Trichomes Africa	Antipyretic Activity	ETOH (95%) Ext	IG Rat	1.0 gm/kg	Active	vs. yeast-induced pyrexia.	K12860
Commercial Sample of Leaf	Antihypercholesterolemic Activity	Decoction Decoction	IG Rat IG Rat	5.0 gm/kg 5.0 gm/kg	Active Active	vs. diet-induced hypercholesterolemia. vs. triton-induced hypercholesterolemia.	M22106
Commercial Sample of Leaf	Antihyperlipemic Activity	Decoction Decoction	IG Rat IG Rat	5.0 gm/kg 5.0 gm/kg	Active Active	vs. diet-induced hypercholesterolemia. vs. triton-induced hypercholesterolemia.	M22106
Seed India	Hypocholesterolemic Activity	Seeds	PO Rat	Not Stated	Active		A14339

Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Seed India	Lipid Peroxide Formation Inhibition	ETOH (100%) Ext ETOH (100%) Ext	IG Rat IG Rat	600.0 mg/kg 600.0 mg/kg	Active Active	vs. stress-induced lipid peroxidation. vs. alloxan-induced lipid peroxidation.	L15713
Not Stated India	Anabolic Activity	Plant	PO Mouse (Castrate) Male	7.70 mg	Active	Animals pre-treated with testosterone. Effects described are from a multi-component Rx.	W00486
Not Stated	Growth Hormone Stimulant	Not Stated	Not Stated	250 mg with 20% l-dopa	Active	Contains l-dopa which converts to dopamine. Dopamine stimulates the release of growth hormone by the pituitary gland.	BP1016
Entire Plant India	Benign Prostatic Hyperplasia Improvement	Hot H2O Ext	PO Human Male	Not Stated	Active	45 patients with prostatitis were given the test preparation and 10 patients were untreated controls. Of 38 patients with benign hypertrophy in the test group, 28 improved and did not need surgery. All controls needed surgery. Effects described are from a multi-component rx.	T15944
Not Stated India	Androgenic Effect	Plant	PO Mouse (castrate)	7.7 mg	Active	Animals pre-treated with testosterone. Effects described are from a multi-component rx.	W00486
Not Stated India	Androgenic Effect	Plant	PO Mouse	22.0 mg	Active	Increased maltase, activity of dorsoventral prostate and increase in fructose content of seminal vesicles. Effects described are from a multi-component rx.	W00486
Not Stated India	Aphrodisiac Activity	Plant	PO Human Male	Not Stated	Active	A clinical trial involving 133 subjects ranging in age from 18-46 years. The subjects presented cases of improper erection, night emissions, premature ejaculations, spermatorrhoea, functional impotence and/or oligospermia. 71.4% of patients were claimed to be aided by the drug with no side effects. Effects described are from a multi-component rx.	T01692

Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Seed India	Aphrodisiac Activity	Not Stated	PO Human Male	Variable	Active	Study involving 21 infertile oligospermic patients in the age group 25-35 years. 50% of subjects showed improvement of prostatic function. Effects described are from a multi-component rx.	T04226
Seed India	Aphrodisiac Activity	Ether Ext	IP Rat Male	Not Stated	Inactive		T03102
Seed India	Aphrodisiac Activity	ETOH (95%)Ext	IP Rat Male	Not Stated	Inactive		T03102
Seed Not Stated	Penis Erectile Stimulant	Not Stated	PO Human Male	Not Stated	Active	Improvement in erection, duration of coitus and post-coital satisfaction has been observed in 56 cases treated for 4 weeks.	T14366
Seed India	Sexual Behavior Modification	H2O Ext	IG Rat Male	500.0 mg/kg	Active	Effects described are from a multi-component rx.	J18758
Seed India	Sexual Behavior Modification	H2O Ext	IG Rat Male	500.0 mg/kg	Active	In alcohol exposed rats.	J18758
Seed India	Sexual Behavior Modification	Seeds	IG Rat Male	1.0 gm/kg	Active		K26652
Entire Plant India	Fertility Promotion Effect	Not Stated	PO Human Male	96.0 mg	Active	35 patients with oligospermia had an improvement in total sperm count and sperm motility.	T12794
Seed India	Spermatogenic Effect	Not Stated	PO Human Male	Variable	Equivocal	30 oligospermic infertiles in the age group of 24-46 years were studied over 4 months. Increases in magnesium content and in sperm count reported. Effects described are from a multi-component rx.	T04225
Seed India	Spermatogenic Effect	H2O Ext	IG Rat Male	500.0 mg/kg	Active	Effects described are from a multi-component Rx.	J18758
Seed India	Spermatogenic Effect	H2O Ext	IG Rat Male	500.0 mg/kg	Active	In alcohol exposed rats.	J18758
Seed India	Spermatogenic Effect	Plant	PO Human Male	Not Stated	Active	40 subjects. Most had a marked improvement relative to showing better semen profiles. Effects described are from a multi-component rx.	T03252

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Seed India	Testosterone Level Increased	H2O Ext	IG Rat Male	500.0 mg/kg	Active	In alcohol & non-alcohol exposed rats.	J18758
Seed India	FSH Release Inhibition	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	FSH Release Stimulation Effect	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	FSH Synthesis Stimulation	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	Gonadotropin Release Stimulation	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	Gonadotropin Synthesis Stimulation	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	LH-release Inhibition	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	LH-release Stimulation	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	LH-synthesis Stimulation	Not Stated	PO Human Male	Variable	Equivocal	Effects described are from a multi-component Rx.	T04226
Seed India	Prolactin Inhibition	Seeds	PO Human Female	15.0 gm	Inactive	Subjects had hyperprolactinemia and galactorrhea. Both subjects had a history of secondary amenorrhea and primary sterility.	T02368
Seed India	Prolactin Inhibition	Seeds	PO Human Male	15.0 gm	Active	Inhibition of prolactin response to chlorpromazine injection.	T02367
Not Stated	Prolactin Inhibitor	Not Stated	Not Stated	250 mg with 20% l-dopa	Active	L-dopa inhibits the release of prolactin by the pituitary gland.	BP1016
Bean endocarp India	Galactorrhea Inhibition	Powder	Human Adult	Not Stated	Active	Effect may be due to its dopamine agonist activity.	BP1012
Seed India	Antigalactagogue Effect	Seeds	PO Human Female	15.0 gm	Inactive	Subjects had hyperprolactinemia and galactorrhea. Both subjects had a history of secondary amenorrhea and primary sterility.	T02368

Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Root India	Cytotoxic Activity	ETOH-H2O(1:1) Ext	Cell Culture	ED50=>20.0 mcg/ml	Inactive	Ca-9kb.	A03335
Prothallus Japan	Antiradiation Effect	MEOH Ext	IP Mouse	100 mg/kg	Inactive	vs. soft X-ray irradiation at lethal dose.	T14342
Seed Nigeria	Skeletal Muscle Stimulant Activity	H2O Ext	Rat	300 mcg/ml	Active	Phrenic nerve-diaphragm.	J19367
Seed Nigeria	Smooth Muscle Stimulant Activity	H2O Ext	Guinea Pig	1.2 mg/ml	Active	Ileum.	J19367
Seed Nigeria	Smooth Muscle Stimulant Activity	H2O Ext	Rabbit	1.5 mg/ml	Active	Jejunum.	J19367
Entire Plant India	Genitourinary Effect	H2O Ext	Oral Mouse	5.0 mg	Active	Mice received a single dose of cadmium chloride (1 mg) plus test preparation or placebo for up to 60 days. The test group showed fewer toxic effects than the control group on the seminiferous tubules, epididymis and spermatids. Effects described are from a multi-component rx.	T15943
Seed Brazil	Hemagglutinin Activity	Protein Fraction	RBC	25.0 microliters	Inactive		J17190
Seed Brazil	Trypsin Inhibition	Protein Fraction	Not Stated	5.0 microliters	Active		J17190
Seed India	Pharmacokinetic Study	Powder	PO Human Male	300.0 ml	Active		E00148
Seed India	Antioxidant Activity	ETOH Ext	Cell Culture (rat liver)	Not Stated	Inactive Active Active	vs. oxidation of GSH. vs. FeSO(4)-induced lipid peroxidation. vs. superoxide & hydroxyl radical reactions.	BP1006
Seed India	Antioxidant Activity	ETOH Ext	PO Rat	600 mg/kg	Inactive	vs. TBA-reactive substances, reduced GSH content & SOD activity in the liver. Activity of serum GOT, GPT & ALP unchanged.	BP1006
Entire Plant	Insecticide Activity	Plant	Not Stated	Not Stated	Inactive		A04807
Seed Sri Lanka	Nematocidal Activity	Decoction	Not Stated	10.0 mg/ml	Inactive	<i>Toxocara canis</i>	M26175

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Seed Bangladesh	Nematocidal Activity	H2O Ext MEOH Ext	Not Stated Not Stated	10.0 mg/ml 1.0 mg/ml	Inactive Weak Activity	<i>Toxocara canis</i> <i>Toxocara canis</i>	M28316
Seed India	Taenicide Activity	ETOH(95%)Ext	Not Stated	Not Stated	Active	<i>Taenia solium</i>	T08066
Seed India	Taenicide Activity	H2O Ext	Not Stated	Not Stated	Active	<i>Taenia solium</i>	T08066
Seed Nigeria	Antivenin Effect	H2O Ext	IP Rat	21.0 mg/kg	Active	The increased LDH, SGPT, CK and changed coagulation parameters due to the venom effect of <i>Echis carinatus</i> were inhibited; lethality was decreased.	L18859
Seed Nigeria	Antivenin Effect	Not Stated	IP Mouse	Variable	Active		L09550
Seed Nigeria	Antivenin Effect	H2O Ext	Mouse	Variable	Active	vs. <i>Echis carinatus</i> venom.	L14375
Seed Italy	Anitvenin Activity	H2O Ext	Not Stated Mice	21 ug/g	Active	Protective effect against <i>Echis carinatus</i> venom evident at 24 h and 1-4 weeks after administration. Antivenin effect due to an immune mechanism; Mucuna proteins raised antibodies.	BP1007
Seed Japan	Plant Growth Inhibitor	Plant	Not Stated	Not Stated	Active		K10998
Seedling Japan	Plant Growth Inhibitor	ETOH(80%)Ext	External Plant	Not Stated	Active	<i>Lactuca sativa</i> seedlings.	M27351

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